

What is claimed is:

[Claim 1] A laminated conductive interconnection for joining an integrated circuit device to a device carrier, said conductive interconnection comprising: alternating metal layers and polymer layers between said integrated circuit device and said device carrier.

[Claim 2] The laminated conductive interconnection in claim 1, wherein said polymer layers include metal particles.

[Claim 3] The laminated conductive interconnection in claim 1, wherein said alternating metal layers and polymer layers comprise one of a cube-shaped structure and a cylinder-shaped structure.

[Claim 4] The laminated conductive interconnection in claim 1, wherein said alternating metal layers and polymer layers are substantially parallel to said device carrier and said integrated circuit device.

[Claim 5] The laminated conductive interconnection in claim 1, wherein said alternating metal layers and polymer layers are substantially perpendicular to said device carrier and said integrated circuit device.

[Claim 6] The laminated conductive interconnection in claim 1, wherein said polymer layers comprise a thermoset polymer.

[Claim 7] The laminated conductive interconnection in claim 1, wherein said polymer layers comprise a thermoplastic conductive adhesive.

[Claim 8] A conductive interconnection for joining an integrated circuit device to a device carrier, said conductive interconnection comprising:
a polymer having a spherical shape between said integrated circuit device and said device carrier; and
metal projections extending from at least one of said integrated circuit device and said device carrier,
wherein said metal projections extend partially into said polymer.

[Claim 9] The conductive interconnection in claim 8, wherein said projections have a triangular shape in cross-section.

[Claim 10] The conductive interconnection in claim 8, wherein said projections have a cone-shape.

[Claim 11] The conductive interconnection in claim 8, wherein said projections extend from both said integrated device and said device carrier.

[Claim 12] The conductive interconnection in claim 8, wherein said polymer includes metal particles.

[Claim 13] The conductive interconnection in claim 8, wherein said polymer comprises a thermoset polymer.

[Claim 14] The conductive interconnection in claim 8, wherein said polymer comprises a thermoplastic conductive adhesive.

[Claim 15] A conductive interconnection for joining an integrated circuit device to a device carrier, said conductive interconnection comprising:

a polymer having a spherical shape between said integrated circuit device and said device carrier; and
dendrites within said polymer.

[Claim 16] The conductive interconnection in claim 15, wherein said dendrites comprise a plated coating on a conductive material.

[Claim 17] The conductive interconnection in claim 15, wherein said dendrites have an irregular pattern within said polymer.

[Claim 18] The conductive interconnection in claim 15, wherein said polymer includes metal particles.

[Claim 19] The conductive interconnection in claim 15, wherein said polymer comprises a thermoset polymer.

[Claim 20] The conductive interconnection in claim 15, wherein said polymer comprises a thermoplastic conductive adhesive.

[Claim 21] A conductive interconnection for joining an integrated circuit device to a device carrier, said conductive interconnection comprising:
a polymer having a spherical shape between said integrated circuit device and said device carrier; and
micelle brushes on the outer surface of said polymer,
wherein a first end of said micelle brushes has an affinity for said polymer and a second end of said micelle brushes has an affinity for said integrated circuit device and said device carrier.

[Claim 22] The conductive interconnection in claim 21, wherein said micelle brushes comprise a reactive moiety with an organic tail.

[Claim 23] The conductive interconnection in claim 21, wherein said polymer includes metal particles.

[Claim 24] The conductive interconnection in claim 21, wherein said polymer comprises a thermoset polymer.

[Claim 25] The conductive interconnection in claim 21, wherein said polymer comprises a thermoplastic conductive adhesive.